CLAIMS

1. A method of following the course of a flight plan of a cooperative aircraft (1) provided with a flight management computer (FMS 30) linked by a data transmission link (53, 61) to a control authority (2), the flight plan being known to the control authority (2) and consisting of a chaining of waypoints (WPi, WPi+1) associated with local flight constraints defining a trajectory skeleton (LT_{FP}) to be followed and a travel schedule to be complied with, the control authority (2) employing the flight plan to estimate the instantaneous position of the aircraft (1), the flight management computer (FMS 30) constructing, on the basis of the trajectory skeleton (LT_{FP}) and of the travel schedule that are specified in the flight plan, an effective trajectory (LT_{FMS}) with softened lateral and vertical transitions, dimensioned so as to take account of the maneuvering capabilities of the aircraft (2) and of a comfort instruction, and tagged by means of pseudo-waypoints (PWPi,j) associated with local flight constraints, the position of a pseudo-waypoint (PWPi,j) marking the start of a transition and the associated local flight constraints defining the properties of the transition, said method being characterized in that the flight management computer (FMS 30) of the aircraft (2) calculates the locations of the projections (SPWPi,j) of the pseudo-waypoints (PWPi,j) onto the trajectory skeleton (LT_{FP}) specified in the flight plan and communicates them via the data transmission link (53, 61) to the control authority (2) which uses them to improve its estimate of the instantaneous position of the aircraft (2).

2. The method as claimed in claim 1, characterized in that the flight management computer (FMS 30) of the aircraft (2) projects the pseudo-waypoints (PWPi,j) onto the trajectory skeleton (LT_{FP}) of the flight plan while conserving distances, the distance to a waypoint

(WPi) of the projection (SPWPi,j) of a pseudo-waypoint (PWPi,j) being equal to that separating the projected pseudo-waypoint (PWPi,j) from the point (SWPi) of the effective trajectory (LT_{FMS}) of the aircraft (2) which is closest to the waypoint (WPi) considered.

3. The method as claimed in claim 2, characterized in that the flight management computer (FMS 30) of the aircraft (2) projects the pseudo-waypoints (PWPi,j) onto the trajectory skeleton (LT_{FP}) of the flight plan while conserving distances measured as a length unit, the distance to a waypoint (WPi) of the projection (SPWPi,j) of a pseudo-waypoint (PWPi,j) being equal to that separating the projected pseudo-waypoint (PWPi,j) from the point (SWPi) of the effective trajectory (LT_{FMS}) of the aircraft (2) which is closest to the waypoint (WPi) considered.

4. The method as claimed in claim 2, characterized in that the flight management computer (FMS 30) of the aircraft (2) projects the pseudo-waypoints (PWPi,j) onto the trajectory skeleton (LT_{FP}) of the flight plan while preserving equivalent, the distances measured as travel time, the travel time from a waypoint (WPi) to the projection (SPWPi,j) of a pseudo-waypoint (PWPi,j) being taken equal to the travel time from the projected pseudo-waypoint (PWPi,j), to the point (SWPi) of the effective trajectory (LT_{FMS}) of the aircraft (2) which is closest to the waypoint (WPi) considered.

5. The method as claimed in claim 1, characterized in that the flight management computer (FMS 30) of the aircraft (2) communicates to the control authority (1), with the locations of the projections (SPWPi,j) of the pseudo-waypoints (PWPi,j) onto the trajectory skeleton (LT_{FP}) specified in the flight plan, indications on the nature and the magnitude of the changes of local flight instruction that are associated with the projected pseudo-waypoints (PWPi,j).